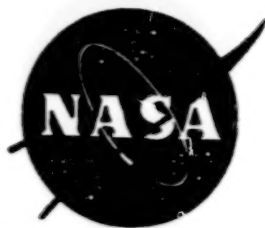


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National Aeronautics  
and Space Administration

March 1, 1995  
AO No. 95-OSS-01

# Announcement of Opportunity

## Rosetta Mission:

## Surface Science Instruments for Champollion

## Appendices A-E

ok Notices of Intent Due: March 31, 1995

95-024160

COMPLETED

Proposals due: June 2, 1995

## **APPENDIX A DESCRIPTION OF THE OPPORTUNITY**

### **I. ANNOUNCEMENT OBJECTIVES**

General scientific objectives for the exploration of the solar system have been established by the appropriate NASA scientific advisory committees, including the Committee on Planetary and Lunar Exploration (COMPLEX) of the Space Studies Board of the National Research Council, and the Solar System Exploration Subcommittee (SSES) of the NASA Advisory Council. COMPLEX, in its 1994 Report entitled "An Integrated Strategy for the Planetary Sciences 1995-2010," states that "the most useful new programs to emphasize in the period from 1995 to 2010 are detailed investigations of comets, Mars, and Jupiter and an intensive search for, and characterization of, extrasolar planets." The report also states that "the study of the composition of a cometary nucleus is the first among equals because such an investigation would contribute so much to understanding how our solar system originated. In order to obtain the most useful information on the comet's original composition, we must examine the elemental, isotopic, and mineralogical make-up of unaltered materials from beneath the comet's crust." The COMPLEX report further states that the most critical aspects of these objectives can be satisfied with a rendezvous mission, which could involve both in situ analyses of the comet nucleus and near-comet investigations.

The French Space Agency Centre National D'Etudes Spatiale (CNES) has specifically endorsed participation in the Rosetta mission by the French scientific community. Every four years CNES conducts a seminar to solicit recommendations from its scientific community on the long term objectives of the CNES scientific programs. At the most recent seminar, held in 1993, the French scientific community for solar system exploration recommended a significant involvement in the study and development of a surface science package for the European Space Agency (ESA) Rosetta mission.

ESA has approved the Rosetta mission, which addresses key cometary science objectives similar to those stated in the COMPLEX report. NASA and ESA have agreed to enter into a cooperative arrangement and jointly implement the Rosetta mission. It is currently planned that the Rosetta mission will consist of an orbiter spacecraft to be supplied by ESA, and two Surface Science Packages (SSP's): Champollion, to be provided by a partnership consisting of NASA and CNES, and possibly other agencies; and RoLand, to be provided by a German consortium. The mission will be launched aboard an Ariane 5 launch vehicle in January 2003, and will rendezvous in August 2011 with the Comet P/Wirtanen, near its aphelion position, following Mars and Earth gravity assists and flybys of two mainbelt asteroids. NASA will provide tracking support through the Deep Space Network (DSN), during critical mission phases. Remote sensing and in situ instruments will characterize the nucleus and coma of the comet for approximately one year, as the comet evolves from its dormant state,

through perihelion in 2013. Late in 2012 the SSP's, which are small landers designed to land on the cometary surface and perform in situ analyses, will be deployed.

Acting in concert, the investigations performed by the Rosetta orbiter, by Champollion, and by RoLand, will directly address the most fundamental cometary science objectives. Through close examination of a comet, a remnant of the early solar system, significant progress will be made toward answering fundamental questions about the origin of the planetary system and its evolution.

## **SCIENTIFIC OBJECTIVES AND CANDIDATE SCIENCE INSTRUMENTS**

The scientific objectives and candidate science instruments for Champollion were recommended by a NASA/CNES Science Working Group (SWG) which was formed in early 1994. The report of the SWG constitutes Volume 1 of the Proposal Information Package.

The highest priority scientific objective of Champollion is:

- **Determination of the Elemental and Molecular Composition of the Cometary Surface Layers.**

The next highest priority objectives are:

- **Determination of the Mineralogical and Isotopic Composition of the Cometary Surface Layers**
- **Determination of Physical Properties (ice phases, texture, porosity, mean density, thermal and dielectric properties)**
- **Optical Characterization of the Cometary Surface**
- **Analysis of the Internal Structure.**

Candidate science instruments examined by the NASA/CNES Science Working Group which could satisfy the science objectives consist of the following (not in priority order):

- **Alpha-proton-x ray spectrometer**
- **Gamma-ray/neutron spectrometer**
- **Evolved gas analyzer**
- **Imager/microscope**
- **Thermal analyzer**

- Temperature sensors
- Permittivity probe
- Accelerometer
- Radio sounder.

## II. TYPES OF PROPOSALS

This Announcement solicits proposals for scientific participation in the NASA/CNES Surface Science Package (Champollion) portion of the ESA Rosetta Mission, specifically Principal Investigator/Instrument proposals which address the above scientific objectives of the Champollion SSP. Investigations addressing other scientific objectives which take advantage of the unique characteristics of the Champollion SSP will also be considered, but at lower priority.

Proposals are solicited for integrated suites of scientific instruments or for single scientific instruments. An instrument suite proposal may be accepted in its entirety, or a portion of a proposed instrument suite may be selected, for possible integration with other proposed individual instruments.

The anticipated capabilities of a strawman cometary sample acquisition and distribution facility are described in the Proposal Information Package. However, proposals are also solicited that include a different cometary sample acquisition and distribution system as an integral portion of the instrument or integrated suite of instruments. Proposals for a stand-alone cometary sample acquisition and distribution system are not solicited.

Investigations which do not include the provision of either a single scientific instrument or an integrated suite of scientific instruments are not solicited by this AO.

Proposers interested in supplying scientific instruments for the ESA Orbiter, or for the RoLand Surface Science Package to be supplied by the German consortium, should refer to the announcements issued by those agencies, in parallel to this AO.

Investigators at U.S. institutions who wish to respond to either the AO for scientific investigations on RoLand, or to the ESA AO for Rosetta orbiter scientific investigations, and who require NASA financial support must submit a copy of their proposal, including a Management and Cost Plan, to NASA Headquarters in order to obtain NASA Funding endorsement. This also applies to Co-Investigators from U.S. institutions participating in non-U.S. proposals submitted in response to the above AO's. Proposers should be aware, however, that funding constraints will limit the number of Rosetta orbiter and RoLand investigations which can be supported by NASA.



### III. SCHEDULE AND PROPOSAL REVIEW PROCESS

A written Notice of Intent, signifying the writer's intent to submit a proposal in response to this AO, is due at NASA Headquarters on or before March 31, 1995.

Proposals must be received at the NASA Headquarters address given on page 4 (original plus 20 copies), and at the CNES Headquarters address given on page 4 (20 copies), on or before June 2, 1995.

A peer review committee appointed by NASA and CNES will jointly review all instrument and instrument suite proposals submitted in response to this AO, for possible flight on the Champollion SSP. Provisional selections will be coordinated with selections made in Germany for the RoLand SSP, and by ESA for the Rosetta orbiter.

The provisional selection of investigations for Champollion will be coordinated between NASA and CNES, and is planned to take place during October 1995.

Confirmation and final selection of investigations for the Champollion Surface Science Package is planned to occur during October 1996.

The detailed design phase for the Champollion lander and instruments (Phase B) will be subsequently initiated, leading to a Functional Requirements and Interface Design Review for instruments in January 1998, a Preliminary Design Review (PDR) in October 1998 for the Champollion lander, followed nine months later by a Critical Design Review (CDR) for the lander. The Instrument Design Review will occur in January 1999. Instrument delivery will occur in January 2000. The Champollion lander will be delivered to ESA in November 2000 for integration with the Rosetta orbiter.

### IV. PHASED IMPLEMENTATION OF INVESTIGATIONS

There is a possibility that proposed instrument designs may not be fully compatible with the Champollion lander. Therefore, after the provisional selection of instruments by NASA and CNES, an Investigation Accommodation Phase of approximately one year duration will take place. Preliminary allocations of critical lander resources (e.g., mass, energy, data rate, etc.) will be assigned to the selected integrated instrument suite and/or to each selected instrument following the provisional selection. These allocations are necessary to guide the lander development that is taking place during the confirmation process. During this Investigation Accommodation Phase, each instrument in the provisionally selected Champollion SSP payload will be reviewed for cost and compatibility with its resource allocation, which may be altered as necessary in order to maximize scientific return within the total resource constraints.

NASA and CNES do not plan to deliberately proceed with an oversubscribed SSP payload into the Investigation Accommodation Phase. However, after review and evaluation of proposals submitted in response to this AO, NASA and CNES may provisionally select, for further evaluation during the Investigation Accommodation Phase, more than one instrument

that addresses a similar set of science objectives. In such a case, a final decision on the selection of such investigations will be made at the end of the Investigation Accommodation Phase, as part of the process of final coordinated NASA/CNES confirmation and selection of the Champollion payload. Incompatibilities between instrument requirements and lander resources identified during the Investigation Accommodation Phase may preclude proceeding with the full set of instruments that had been selected.

Final selection and confirmation of all investigations will take place at the conclusion of the Investigation Accommodation Phase. A Payload Confirmation Review, followed by final selection of instruments, is planned for October 1996.

## **V. FORMATION OF CHAMPOLLION PROJECT SCIENCE GROUP**

After provisional selection of instruments by NASA and by CNES, a Champollion SSP Project Science Group (PSG) will be established. All Champollion SSP Principal Investigators will automatically become members of the PSG, which will be co-chaired by the NASA and CNES Project Scientists. The PSG will meet regularly through the lifetime of the Champollion mission, and will work with the Champollion Project Office and the ESA Rosetta Orbiter Project Scientist and Project Manager, and coordinate as necessary with the RoLand SSP Project Scientist. Responsibilities of the Champollion PSG members are described in the Proposal Information Package.

## **VI. REQUIREMENTS AND CONSTRAINTS**

### **A. Baseline Mission Overview**

The Rosetta spacecraft, consisting of the orbiter and two SSP's, Champollion and RoLand, will be launched by an Ariane 5 in January 2003. After a short commissioning phase, the Rosetta spacecraft will cruise in a hibernation state out to a Mars flyby for gravity assist, approximately 950 days later, followed by the first of two Earth flybys, approximately 1050 days after launch. A close flyby of the mainbelt asteroid 3840 Mimistrobell occurs approximately 300 days later, followed by a second Earth flyby for gravity assist, which occurs 450 days later, approximately 1800 days after launch. A second mainbelt asteroid flyby occurs approximately 300 days later, 2100 days after launch, of asteroid Shipka. This flyby is followed by a long heliocentric cruise of approximately 1050 days duration. All of the cruise phases are conducted with the spacecraft and SSP's in a complete hibernation mode. Approximately 3150 days will have elapsed after launch before the Comet P/Wirtanen is approached, in 2011.

The Champollion SSP will separate from the Rosetta orbiter and land on the Comet P/Wirtanen during its inactive phase, before it reaches its perihelion position. Prior to the separation of Champollion, data from Rosetta orbiter instruments will characterize the mass, shape, rotational dynamics, and gravity field of the comet, as well as parameters related to the composition of the visible surface. These data may be utilized in selecting landing sites for both Champollion and RoLand. The orbiter will then be placed into an orbit with the necessary conditions for lander deployment. The lander will separate and fall to the surface;

the duration of its descent is constrained to be less than three hours, and the velocity of impact is constrained to be less than  $5 \text{ ms}^{-1}$ .

All scientific experiments for Champollion are constrained to be completed within 24 hours after landing, with all science data transmitted to the Rosetta orbiter for prompt relay to ground stations. After another 36 hours, the science sequence of 24 hours duration may be repeated. Thus, the nominal science data gathering for Champollion is completed approximately 84 hours after its landing. Further technical studies may determine that longer durations are feasible. The nominal science sequence includes the acquisition of a cometary material sample located approximately 10–20 cm below the surface, and for its distribution to a suite of instruments for analysis. Surface samples, as well as samples located approximately 1 m below the surface may also be acquired, if lander resources permit.

The total mass of the Champollion SSP is limited to approximately 43 kg, including contingency, and including approximately 12 kg (plus contingency) for science instruments. The total energy available to all science instruments for the nominal 84 hour science sequence described above is approximately 450 Whr.

A detailed description of the Champollion baseline mission is given in Volume 2 of the Proposal Information Package.

Volume 2 of the Proposal Information Package also contains the following:

- i. the capabilities and constraints of the Champollion SSP, including the surface and subsurface cometary material sampling device, and instrument interfaces;
- ii. information on the several distinct environments of the planned Rosetta mission which the SSP instruments must survive and operate in;
- iii. the currently envisioned capabilities of the Champollion SSP mission operations system and ground system constraints.

## **B. Approaches to Reducing Instrument Costs**

The scientific objectives of the Champollion SSP mission, listed in Section I of this Appendix, place highest priority on the detailed in situ investigation of the Comet P/Wirtanen. The firm overall limitation on the science costs and the total costs of the NASA and CNES participation in the Rosetta mission will result in a constrained selection of investigations, especially among those which address objectives of lower priority. Prospective investigators are encouraged to seek innovative approaches to reducing both instrument costs and required lander resources. For example, coordination among proposers to optimize the measurement goals of related investigations, and/or to share common hardware, may lead to useful savings.

Investigators are encouraged to reduce costs by proposing to fly instrument suites that integrate a set of instruments which address several or all of the primary scientific objectives of the Champollion mission.

Another approach to cost savings, which proposers are also encouraged to investigate, may be to share instrument development costs through international collaboration.

Opportunities for achieving cost savings will also occur during the Investigation Accommodation Phase (see Section IV). At that time the PI's of certain provisionally selected investigations may be asked to reduce their experiment costs by coordinating measurement goals with related investigations, by sharing instrument hardware, or by coordinating their investigations in other ways.

### C. Special NASA Mission Constraints

Certain constraints are mandated by NASA's commitment to cost efficiency in its participation in the Champollion mission. The cost constrained nature of the mission creates special conditions: the scientific payload of the Champollion SSP will be limited by cost as well as by mass, total energy consumption, volume, data rate, duty cycle, and other key resources as specified in the Proposal Information Package.

It is especially important that individuals proposing to be PI's on flight instrument investigations adequately justify the number of NASA-funded Co-I's that they plan to include in their teams. Each Co-I must have a defined task or tasks of significant value. Time phasing of Co-I involvement should be seriously considered in order to reduce overall personnel costs.

Funding for provisionally selected PI's during the Investigation Accommodation Phase will be very limited. It is expected that there will be approximately \$25M (real-year dollars) available for instrument development for the Champollion SSP, which will be completed by approximately January 2000, and for prelaunch participation in the activities of the PSG.

Funding will not be provided to support extensive activities involving the development of new technologies. It is nonetheless recognized that during the lengthy detailed instrument design and development phases for Champollion, new technologies may be identified which would enhance the scientific investigation. Selected PI's are strongly encouraged to investigate additional funding sources for these new technologies, that is, funding sources which are external to the Office of Space Science.

It is expected that there will be a total of approximately \$20M (real-year dollars) available for postlaunch Champollion investigator support and for support of Champollion mission operations, which are expected to extend through December 2012.

It is expected that there will be a total of approximately \$20M (real-year dollars) available for instrument development support of U.S. PI's and Co-I's selected in response to the Rosetta orbiter AO, together with U.S. Co-I's selected in response to the AO for RoLand. It is expected that there will be no funding available for U.S. PI's on RoLand, and only limited funding for U.S. Co-I's.



It is currently NASA's policy that scientific data collected in the course of NASA-funded basic research be made available immediately after its collection and validation, via electronic means. Specific guidelines for data management and data archiving based on this governing principle will be established by the Program Offices in conjunction with the PSG after selection of investigations and formation of the PSG.

#### **D. Data Records Requirements and Data Validation**

Many of the scientific objectives of the Champollion mission may be realized only by the detailed analysis of simultaneous, complementary data sets obtained from multiple instruments. While some preliminary analyses may be accomplished during the Champollion mission itself, others may require extended study during a data analysis phase that is expected to follow the mission. To make shared analyses possible, both during and after the mission, raw data, calibration records, and processed data must be maintained in an updated/upgraded form throughout the period of investigation. Specifically, Principal Investigators must plan to:

- Maintain a continually updated/upgraded record of the 'best version' of the data until significant changes in data calibration no longer occur.
- Adopt a standard format, agreed upon by the PSG, for the 'best version' of the data that will make the data easily accessible.
- Make updated/upgraded data records available to other investigators during the SSP mission to an extent determined by the PSG or by mutual agreement among investigators.
- Prepare a comprehensive set of data records, supported by appropriate documentation, for deposition in a designated archive at a time and in a format that will be coordinated with ESA.

To establish a common basis for the evaluation of proposals, the data validation period used for budgeting purposes should be compatible with the Champollion baseline mission schedule (see Volume 2 of the Proposal Information Package) and should not extend beyond the completion of the Champollion mission, which is expected by the end of the year 2012, so that proposed validation must not extend beyond December 31, 2012. It is anticipated that subsequent studies of the Rosetta orbiter and SSP data will be supported through competitive data analysis programs open to the entire international science community.

#### **VII. PROGRAM MANAGEMENT**

The Champollion SSP will be jointly implemented by NASA and CNES. Program management responsibility at NASA has been assigned to the Solar System Exploration Division (SSED) in NASA's Office of Space Science. NASA has assigned its project implementation responsibility to the Jet Propulsion Laboratory (JPL) in Pasadena, California. Program management at CNES is the responsibility of the Delegation for Scientific Programs



in the CNES Headquarters Program Directorate. CNES has assigned its project implementation responsibility to its technical facility located in Toulouse.

The design, development, and implementation of the Champollion SSP mission will involve the direct interaction of Program and Project Management and the PSG. The Champollion Project Manager (from JPL) will serve as the point of contact with the Rosetta Project. The Champollion Deputy Project Manager (from CNES) will be responsible for Champollion design, development, and implementation support provided by CNES. The CNES Project Scientist will serve as the point of contact with the Rosetta Project Scientist.

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**APPENDIX B**  
**GENERAL INSTRUCTIONS AND PROVISIONS**

**I. INSTRUMENTATION AND/OR GROUND EQUIPMENT**

By submitting a proposal, the investigator and institution agree that NASA has the option to accept all or part of the offeror's plan to provide the instrumentation or ground support equipment required for the investigation, or NASA may furnish or obtain such instrumentation or equipment from any other source as determined by the selecting official. In addition, NASA reserves the right to require use, by the selected investigator, of Government instrumentation or property that subsequently becomes available, with or without modification, that will meet the investigative objectives.

**II. TENTATIVE SELECTIONS, PHASED DEVELOPMENT, PARTIAL SELECTIONS, AND PARTICIPATION WITH OTHERS**

By submitting a proposal, the investigator and the organization agree that NASA has the option to make a tentative selection pending a successful feasibility or definition effort. NASA has the option to contract in phases for a proposed experiment, and to discontinue the investigative effort at the completion of any phase. The investigator should also understand that NASA may desire to select only a portion of the proposed investigation and/or that NASA may desire the individual's participation with other investigators in a joint investigation, in which case the investigator will be given the opportunity to accept or decline such partial acceptance or participation with other investigators prior to a NASA selection. Where participation with other investigators as a team is agreed to, one of the team members will normally be designated as its team leader or contact point.

**III. SELECTION WITHOUT DISCUSSION**

The Government reserves the right to reject any or all proposals received in response to this Announcement when such action shall be considered in the best interest of the Government. Notice is also given of the possibility that any selection may be made without discussion (other than discussions conducted for the purpose of minor clarification). It is, therefore, emphasized that all proposals should be submitted initially on the most favorable terms that the offeror can submit.

#### IV. NON-U.S. PROPOSALS

Guidelines for non-U.S. responses to this Announcement of Opportunity are presented in Appendix C, Section B. Requirements for PI/Instrument proposals involving U.S./non-U.S. collaboration are summarized below:

##### 1. Non-U.S. Proposals with U.S. Co-I's

In cases where the participation of a U.S. individual is included in a PI/Instrument proposal submitted by a non-U.S. individual, and where it is anticipated that such participation will be supported by NASA, a Management and Cost Plan covering such participation must be submitted to NASA as part of the proposal. This Management and Cost Plan must be signed by the U.S. individual and certified by the U.S. individual's institution. Such costs will be considered in the review and evaluation of proposals submitted by non-U.S. individuals.

##### 2. U.S. Proposals with Non-U.S. Co-I's

Non-U.S. individuals who plan to participate as Co-Investigators on a U.S. PI/Instrument proposal must have such participation reviewed and endorsed by their appropriate governmental agency before such participation can be selected. Evidence of such review and endorsement should be provided at the time that the proposal is submitted or as soon as possible thereafter. Formal arrangements for such participation will be made by NASA's International Relations Division after selection of the investigation.

#### V. TREATMENT OF PROPOSAL DATA

It is NASA policy to use information contained in proposals and quotations for evaluation purposes only. While this policy does not require that the proposal or quotation bear a restrictive notice, offerors or quoters should, in order to maximize protection of trade secrets or other information that is commercial or financial and confidential or privileged, place the following notice on the title page of the proposal or quotation and specify the information, subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information (data) contained in proposals and quotations will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

##### **RESTRICTION ON USE AND DISCLOSURE OF PROPOSAL AND QUOTATION INFORMATION (DATA)**

The information (data) contained in (insert page numbers or other identification) of this proposal or quotation constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed for other than evaluation purposes; provided, however, that in the event a contract is awarded on the

basis of this proposal or quotation the Government shall have the right to use and disclose this information (data) to the extent provided in the contract. This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

#### VI. STATUS OF COST PROPOSALS (PROPOSALS REQUESTING NASA SUPPORT)

The investigator's institution agrees that the cost proposal submitted in response to this Announcement is for proposal evaluation and selection purposes, and that, following selection and during negotiations leading to a definitive contract, the institution will be required to resubmit or execute Standard Form (SF) Form 1411 "Contract Pricing Proposal Cover Sheet" (see Appendix E) and all certifications and representations required by law and regulation.

#### VII. LATE PROPOSALS

Proposals received after the deadline given in this Announcement will not be accepted, and will be returned to the proposer.

#### VIII. SOURCE OF SPACE INVESTIGATIONS

Investigators are advised that candidate investigations for space missions can come from many sources. These sources include those selected through the Announcement of Opportunity, those generated by NASA in-house research and development, and those derived from contracts and other agreements between NASA and external entities.

#### IX. DISCLOSURE OF PROPOSALS OUTSIDE GOVERNMENT

NASA may find it necessary to obtain proposal evaluation assistance outside the Government. Where NASA determines it is necessary to disclose a proposal outside the Government for evaluation purposes, arrangements will be made with the evaluator for appropriate handling of the proposal information. Therefore, by submitting a proposal, the investigator and institution agree that NASA may have the proposal evaluated outside the Government. If the investigator or institution desire to preclude NASA from using an outside evaluation, the investigator or institution should so indicate on the cover. However, notice is given that if NASA is precluded from using outside evaluation, it may be unable to consider the proposal.

#### X. EQUAL OPPORTUNITY (U.S. PROPOSALS ONLY)

By submitting a proposal, the investigator and institution agree to accept the following clause in any resulting contract:



## EQUAL OPPORTUNITY

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
2. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to (a) employment; (b) upgrading; (c) demotion; (d) transfer; (e) recruitment or recruitment advertising; (f) layoff or termination; (g) rates of pay or other forms of compensation; and (h) selection for training, including apprenticeship.
3. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, the notices to be provided by the Contracting Officer that explain this clause.
4. The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
5. The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Contracting Officer, advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
6. The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
7. The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.
8. The Contractor shall permit access to its books, records, and accounts by the contracting agency or the Office of Federal Contract Compliance Programs (OFCCP) for the purposes of investigation to ascertain the Contractor's compliance with the applicable rules, regulations, and orders.

9. If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, the contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
10. The Contractor shall include the terms and conditions of subparagraph 1 through 9 of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.
11. The Contractor shall take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

#### **XI. PATENT RIGHTS**

1. For any contract resulting from this solicitation awarded to other than a small business firm or nonprofit organization, the clause at NFS 18-52.227-70, "New Technology," shall apply. Such contractors may, in advance of contract, request waiver of rights as set forth in the provision at NFS 18-52.227-73, "Requests for Waiver of Rights to Inventions."
2. For any contract resulting from this solicitation awarded to a small business firm or nonprofit organization, the clause at FAR 52.227-11, "Patent Rights--Retention by the Contractor (Short Form)" (as modified by NFS 18-52.227-11) shall apply.

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## **APPENDIX C**

### **GUIDELINES FOR PROPOSAL PREPARATION AND SUBMISSION**

#### **A. PROPOSAL PREPARATION**

The following guidelines apply to the preparation of proposals by potential investigators in response to this Announcement of Opportunity. The material presented is merely a guide for the prospective proposer and it is not intended to be all encompassing. The proposer should provide information relative to those items applicable or as otherwise required by this Announcement of Opportunity.

In order to provide a firm basis for the comparison of proposals received in response to this AO, the Champollion Mission described in the Proposal Information Package, and the Champollion lander capabilities and constraints, the expected flight environments, ground system capabilities and constraints, and requirements for data archiving also described in the Proposal Information Package must be used for proposal preparation.

The description of any proposed instrumentation must provide adequate technical information to permit evaluation. In addition, it must specifically address those lander resources, configurations, or special requirements necessary for successful implementation of the proposed investigation. This information should be given in sufficient detail to permit an evaluation of both the concept and the practical feasibility of the investigation. If appropriate, the proposal should describe the heritage of any proposed instrumentation, how the investigation is related to other proposed investigations, and the specific approach being taken to coordinate measurement goals and/or to share instrument hardware. The proposal should describe any technology developments which are anticipated for development of the instrument or instrument suite, and also describe backup strategies in the event that the expected technologies are not available. The proposal should also describe any recognized need for supporting laboratory research or ground-based, airborne, or other activities required to support development of the instrument and its operation during the mission.

The proposal should also contain the best possible description of the proposer's plans for data processing, management, and archiving. Many of the details of these procedures are not established at this time, but the proposal should include as much information as possible concerning the investigator's plans, requirements, and costs, especially those for unique data management requirements (hardware and software).

Concepts for minor modifications and/or additions to the Champollion lander which enhance scientific return may be included in the proposals. However, such proposed modifications

must be clearly marked as such, and any costs required for necessary modifications to the baseline lander will be attributed to the investigation in question.

A uniform proposal format will be required from all proposers in order to aid in proposal evaluation and to facilitate comparative analysis.

Each proposal should be submitted in two (2) separately-bound volumes: Volume 1, Investigation and Technical Plan; and Volume 2, Management and Cost Plan. All documents must be typewritten in English and must be clearly legible. At least one copy of each document should be clear black print on white paper and of a quality suitable for reproduction. Submission of proposal material by facsimile (Fax), electronic media, video tape, floppy disk, etc., is not acceptable.

All proposals must be signed by an institutional official authorized to certify institutional support and sponsorship of the investigation, as well as concurrence in the management and financial parts of the proposal. Additionally, for all proposals requesting NASA funding, certifications regarding drug-free workplace requirements, debarment, and lobbying must be supplied; Appendix E contains the forms for these certifications.

The format required and the required contents are summarized below.

**a. Cover Letter**

A letter or cover page should be forwarded with the proposal. It should be signed by the investigator and an official by title of the investigator's organization who is authorized to commit the organization that is responsible for the proposal and its contents.

**b. Table of Contents**

The proposal should contain a table of contents.

**c. Identifying Information**

The proposal should contain a short descriptive title for the investigation, the names of all investigators, and the name of the organization or institution. The full name of the Principal Investigator, address with zip code, telephone and Fax numbers and e-mail address should be included.

**d. Investigation and Technical Plan (Volume 1)**

Volume 1 should consist of the main body of the proposal and any optional appendices. The volume should provide a clear statement of the proposed investigation and how it will address the scientific objectives of the Champollion portion of the Rosetta mission. The proposal should contain enough background information to be meaningful to a reviewer who is generally familiar with the field, although not necessarily a specialist.



The title page of Volume 1 must state the title(s), names(s), address(es), affiliation(s), the telephone and Fax numbers, and e-mail addresses of the Principal Investigator and Co-Investigators. The title page must also contain the authorizing signatures of appropriate officials of participating organizations. Such organizations may include industrial contractors who are part of the proposed team. In the Preface to Volume 1 the proposer must also include the following two pages: (1) a separate abstract, one page or less in length, describing the proposed investigation; (2) a separate table, one page or less in length, listing the major instrument parameters or specifications of the investigation.

The main body of Volume 1 (Items 1-5 below) is limited as follows:

- for single instrument proposals, twenty-five (25) single-spaced, typewritten pages, without reduction, including illustrations, and may contain no more than two (2) foldout pages;
- for instrument suite proposals, a maximum of seventy-five (75) pages, containing no more than six (6) foldout pages.

Appendices are limited to a total of five (5) single-spaced, typewritten pages, without reduction for single instrument proposals, and fifteen (15) pages for instrument suite proposals. In complying with page limits, no page should contain more than 50 lines of text, and the type size should not be smaller than 10-point font, with a minimum margin of 2.5 cm on all sides.

Volume 1 generally will contain the following:

1. Summary. A simple, concise statement about the investigation, its conduct, and the anticipated results.
2. Objectives and Significant Aspects. A brief definition of the objectives, their value, and their relationships to past, current, and future efforts. The history and basis for the proposal and a demonstration of the need for such an investigation. A statement of present development in the discipline field, and areas for potential insertion of new technology. Provisions for public educational outreach of the proposed investigation.
3. Investigation Approach.
  - a. Fully describe the concept of the investigation.
  - b. Detail the method and procedures for carrying out the investigation.
4. Instrumentation. This section should describe all information necessary to plan for experiment development, integration, ground operations, and flight operations. This section must be complete in itself without the need to request additional data. Failure to furnish complete data may preclude evaluation of the proposal.

- i. Instrument Description. This section should fully describe the instrumentation and indicate items which are proposed to be developed, as well as any existing instrumentation. Performance characteristics should be related to the experiment objectives as stated in the proposal.
- ii. Instrument Integration. This section should describe all parameters of the instrument pertinent to the accommodation of the instrument in the spacecraft. These include, but are not limited to: volumetric envelope (including view angle requirements), weight, power, and energy requirements, thermal requirements, telemetry requirements, sensitivity to or generation of contamination (e.g., electromagnetic interference, gaseous effluents), data processing requirements. Energy requirements and a time profile of power requirements should be described.

In addition, any requirements regarding the provision of cometary samples, for example, number, size, shape, or temperature requirements should be described.

- iii. Ground Operations. This section should identify requirements for prelaunch or postlaunch ground operations support.
  - iv. Flight Operations. This section should identify any requirements for flight operations support including instrument testing, calibration, and mission planning. Describe any special communications or near real-time ground support requirements and indicate any special equipment or skills required of ground personnel.
5. Data Reduction and Validation. A discussion of the data reduction and validation plan including, insofar as possible, the method and format. The plan should include a schedule for the submission of reduced and validated data, as specified in this Announcement of Opportunity.
  6. Roles and Responsibilities. The roles and responsibilities of the PI and of each Co-Investigator must be described, along with a time-phasing of their activities. Because the number of participants will be limited, each participant must have an identified specific function which makes a demonstrable contribution to the development and/or implementation of the investigation. A condensed description of all prospective participants' relevant background, experience, and selected publications (if appropriate) should be provided.

#### **e. Management and Cost Plan (Volume 2)**

The management plan sets forth the investigator's approach for managing the work, the recognition of essential management functions, and the overall integration of these functions in order to meet the established review and delivery dates. It provides insight into the organization proposed for the work, including the internal operations and lines of authority

with delegations, together with internal interfaces and relationships with NASA or CNES, major subcontractors, and associated investigators.

This volume does not have page limitations.

The following items must be supplied in Volume 2.

1. Method of Instrument Acquisition. Volume 2 must describe the proposed method of instrument acquisition. Specifically, it must include the following, as applicable:
  - (i) Rationale for the investigator to obtain the instrument through or by the investigator's institution.
  - (ii) Method and basis for the selection of the proposed instrument fabricator.
  - (iii) Unique or proprietary capabilities of the instrument fabricator that are not available from any other source.
  - (iv) Contributions or characteristics of the proposed fabricator's instrument that make it an inseparable part of the investigation.
  - (v) Availability of supporting personnel in the institution to successfully administer the instrument contract and technically monitor the fabrication.
  - (vi) Status of development of the instrument, e.g., what additional development is needed. Areas that need further design or in which unknowns are present. Backup options for any function or hardware requiring technology development.
  - (vii) Method by which the investigator proposes to:
    - (a) Prepare instrument hardware and software specifications.
    - (b) Review development progress.
    - (c) Review design and fabrication changes.
    - (d) Participate in testing program.
    - (e) Participate in final checkout and calibration.
    - (f) Provide for integration of instrument.

- (g) Support the flight operations.
  - (h) Coordinate with Co-Investigators, other related investigations, and the payload integrator.
  - (i) Assure safety, reliability, and quality.
- (viii) For proposals seeking NASA funding, planned participation by small and/or minority business in any subcontracting for instrument fabrication or investigative support functions.

All major facilities, laboratory equipment, and ground-support equipment (GSE) (including those of the investigator's proposed contractors and those of NASA and other U.S. Government agencies) essential to the experiment in terms of its system and subsystems are to be indicated, distinguishing insofar as possible between those already in existence and those that will be developed in order to execute the investigation. The outline of new facilities and equipment should also indicate the lead time involved and the planned schedule for construction, modification, and/or acquisition of the facilities.

2. Schedules and Responsibilities. Volume 2 must include schedules necessary for the logical and timely pursuit of the work, accompanied by a description of the investigator's work plan and deliverables to the Champollion Project, and the responsibilities of the Co-Investigators. A discussion must be provided of the specific roles that each of the participants and their institutions intend to play in the investigation. This discussion should include a statement of the portion of time which each participant expects to devote to the investigation and of the institutional resources on which each can draw.
3. Cost Plan For Proposals Requesting NASA Support. Volume 2 must also provide a detailed estimate of the total cost of the investigation and cost spread per government fiscal year, along with sufficient technical information on which to judge the reliability of the figures. The assumptions on which the estimate is based should be stated, particularly with regard to Government-furnished equipment and services. Details on Cost Proposal Certifications are provided in Appendix B (General Instructions and Provisions) to this AO.

The cost plan should summarize, in real-year dollars, and by Government Fiscal Year (October 1 to September 30), the total investigation cost by major categories of cost as well as by function.

The categories of cost should include the following:

- a. Direct Labor. List by labor category, with labor-hours and rates for each. Provide actual salaries of all personnel and the percentage of time each individual will devote to the effort.

- b. Overhead. Include indirect costs which, because of their incurrence for common or joint objectives, are not readily subject to treatment as a direct cost. Usually this is in the form of a percentage of the direct labor costs.
- c. Materials. This should give the total cost of the bill of materials, including estimated cost of each major item. Include lead time of critical items.
- d. Subcontracts. List those over \$25,000, specify the vendor and the basis for estimated costs. Include any baseline or supporting studies.
- e. Special Equipment. Include a list of special equipment with lead and/or development time. Include number of units and types.
- f. Travel. List estimated number of trips, destinations, duration, purpose, number of travelers, and anticipated dates.
- g. Other Costs. Costs not covered elsewhere.
- h. General and Administrative Expense. This includes the expenses of the institution's general and executive offices and other miscellaneous expenses related to the overall business.
- i. Fee (if applicable).

Separate cost tables, using the above categories, should be attached to show total cost allocable to the following by Government Fiscal Year:

- a. PI and Co-I Costs for Science Support. The science support category includes all efforts associated with overall investigation management; support of the Champollion PSG; the development of calibration requirements (but not calibration itself); the planning for the mission operations/data analysis phase, including necessary prelaunch development of ground software required only for postlaunch activities. This category begins on October 1, 1995, and ends on March 1, 2003 (approximately launch plus 30 days).
- b. Hardware Costs. The hardware category consists of all efforts, including field support at JPL, associated with the design, fabrication, test, calibration, operation and maintenance of the flight instrument(s) and a suitable complement of spare components (and functional or nonfunctional models such as Engineering Models and Temperature Control Models as required by the Project); the design, development, test, operation, and maintenance of instrument ground support equipment; the design, test, and maintenance of instrument and support



equipment software; support to the Project regarding matters related to the integration of the flight instrument with the spacecraft; and the engineering management of the foregoing efforts. This category begins on October 1, 1996, and ends on March 1, 2003.

- c. Mission Operations/Data Reduction and Validation Costs. The mission operations/data validation phase includes all costs associated with the investigation beginning on March 2, 2003, including support of the PSG, mission operations, computer time, and data reduction, validation, and archiving. As with science support, it also includes investigator support of the PSG working groups, but in the period after March 2, 2003, until December 31, 2012.

## **B. PROPOSAL SUBMISSION**

The following rules apply to the submission of proposals from both U.S. and non-U.S. institutions in response to this Announcement of Opportunity. Proposals from French institutions should be submitted in response to the CNES AO for Champollion.

### **1. Quantity**

An original plus twenty (20) copies of Volume 1 (Investigation and Technical Plan) and an original plus twenty (20) copies of Volume 2 (Management Plan and Cost Plan) must be submitted by all proposers to the following NASA address:

Dr. Jurgen H. Rahe  
NASA Champollion Program Scientist  
Solar System Exploration Division  
Code SL  
NASA Headquarters  
Washington, DC 20546-0001  
U.S.A.

In addition, in order to facilitate joint NASA/CNES evaluation of proposals, twenty (20) copies of Volume 1 (Investigation and Technical Plan) and twenty (20) copies of Volume 2 (Management Plan and Cost Plan) must be submitted by all proposers to the following address:

Dr. Geneviève Debouzy  
Delegate for Scientific Programs  
CNES  
2, Place Maurice-Quentin  
75039 Paris Cedex 01  
France

## 2. Deadline

Proposals must arrive at the above addresses on or before June 2, 1995. Proposals received after this date will be returned to the proposer.

## 3. Proposals from Non-U.S. Institutions

The following guidelines are established for non-U.S. responses to this Announcement of Opportunity. Proposers from French institutions should refer to the guidelines established by the CNES AO for Champollion.

Proposals from individuals outside the United States must be typewritten in English and in the same format as U.S. proposals. Proposers from non-U.S. institutions are not required to submit a Cost Plan unless individuals seeking NASA support are involved in the proposal; however, a Management Plan must be submitted.

In cases where the participation of a U.S. individual is included in a proposal submitted by a non-U.S. individual, and where it is requested that such participation be supported by NASA, a Management and Cost Plan covering such participation must be submitted to NASA as part of the proposal. This Management and Cost Plan must be signed by the U.S. individual and certified by the U.S. individual's institution. Such costs will be considered in the review and evaluation of proposals submitted by non-U.S. individuals.

Proposers from non-U.S. institutions must have their proposals reviewed and endorsed by the appropriate sponsoring government agency. Such endorsement by a non-U.S. organization indicates:

- 1) The proposal merits careful consideration by NASA.
- 2) If the proposal is selected, sufficient funds will be available to undertake the activity envisioned.

A letter of endorsement from the non-U.S. governmental agency must be submitted to the NASA address given above, and also to:

Ms. Shiron D. Gaines  
International Relations Division  
Code IRD  
NASA Headquarters  
Washington, DC 20546-0001  
U.S.A.

All proposals from non-U.S. institutions will compete on an equal basis with U.S.-originated proposals, and go through the same review, evaluation, selection, and confirmation process. For those non-U.S. proposals selected, NASA will arrange with the sponsoring agencies for participation on a cooperative (no exchange of funds) basis, in which NASA and the

sponsoring agencies will each bear the cost of discharging its respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail:

- 1) A letter of notification by NASA; and
- 2) An exchange of letters between NASA and the sponsoring governmental agency.

**APPENDIX D**  
**PROPOSAL EVALUATION CRITERIA, SELECTION, AND IMPLEMENTATION**

**A. EVALUATION CRITERIA**

The fundamental aim of the investigation acquisition process is to identify scientific ideas and unique instrumental and analytical capabilities which best suit the overall scientific and cost objectives of the Champollion SSP portion of the Rosetta mission, as described in this AO. Accordingly, the following criteria, listed in order of descending importance, will be used in evaluating all proposals submitted in response to this AO:

1. The scientific and technological merit of the proposed investigation and its relevance to this specific opportunity and to the established mission plans and objectives.
2. Total cost and management considerations. Total cost will be considered to include not only that proposed for the instrument development and for data validation, but also the impact of the instrument and the investigation on lander and mission operation costs. Due to the program's strict financial constraints, any proposed instrument options that would enhance scientific return but increase cost should be clearly identified and costed so that evaluation and selection decisions can be made. Management aspects include demonstrated capability to adhere to sound business practices.
3. The adequacy of the proposed instrument or integrated instrument suite for the proposed investigation, with particular regard to the instrument's or instrument suite's ability to supply the data needed for the investigation within the Champollion lander constraints such as mass, volume, available energy, available data storage and transmission rates, and sequencing. Relationships of proposed instrumentation to developed techniques, to previously flown spacecraft instruments, or to existing hardware will be factors specifically considered in determining adequacy.
4. The competence and relevant experience of the proposer and any proposed investigative team as an indication of their ability to carry the investigation to a successful conclusion.
5. The technical and cost risk (uncertainty) associated with the investigation.

6. Provisions allowed during the instrument or instrument suite detailed design and development phases for inclusion of potential new technology.
7. Provision for transferring for other uses, potentially new scientific instrument technology developed during the proposed investigation.
8. The reputation and interest of the proposer's institution, as measured by the willingness of the institution to provide the necessary support (logistics, facilities, etc.) to ensure that the investigation can be completed satisfactorily.
9. Provision for public educational outreach of the proposed investigation.

NASA and CNES may desire to select only a portion of the proposer's investigation and may also desire the proposer's participation with other investigators in a joint investigation. In this case, the proposer will be given the opportunity to accept or decline such partial acceptance and/or participation with other investigators.

### **3. EVALUATION AND SELECTION PROCEDURES**

A joint NASA/CNES scientific and technical peer review will be conducted of all proposals submitted in response to this AO and the similar Champollion AO issued by CNES. Subsequently, separate categorizations will be conducted by NASA and by CNES of NASA and CNES proposals, respectively. NASA and CNES will each adhere to its own procedures in selecting investigations for the Champollion SSP. These procedures and the selections themselves, however, will be closely coordinated and will involve exchange of agency representatives at key points throughout both processes.

The proposal evaluation and selection processes to be followed are described below.

Proposals received in response to this AO which request financial support from NASA will be evaluated in accordance with the provisions of NASA Handbook NHB 8030.6B (Guidelines for Acquisition of Investigations). All proposals will be subjected to a preliminary screening to determine their suitability and responsiveness to the AO. Proposals which are not responsive to the intent of the AO will be handled as correspondence. Those proposals which are responsive to the AO will then be subjected to a preliminary technical, management, and cost assessment.

NASA and CNES will make use of both the investigator's proposal, and an independent technical and cost evaluation of the proposal to be provided by a joint NASA/CNES engineering, management, and cost evaluation panel. This evaluation will include assessment of the cost impact of accommodating the instrument or integrated instrument suite in the SSP payload; instruments which exceed the lander capabilities will be charged with the cost of any required spacecraft modifications.

Following these preliminary actions, the scientific and technical aspects of each proposal will be assessed by panels composed of individuals from the United States and from France who



are scientific and technical peers of the proposers. The purpose of this peer evaluation will be to determine the scientific and technical merit of each proposal, expressed in terms of its strengths and weaknesses. Results of the earlier technical and cost evaluation will be available to these reviewers.

## **1. Categorization of Proposals Requesting NASA Funding**

After these evaluations, a Categorization Subcommittee, consisting of U.S. civil servants, will consider the totality of all evaluations, including additional information regarding engineering, management, and cost aspects, in order to categorize the proposals submitted for NASA funding, according to the following definitions:

Category I: Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the Announcement's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and within budget and that the data can be properly reduced and validated in a reasonable time.

Category II: Well-conceived and scientifically and technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.

Category III: Scientifically and technically sound investigations which require further development.

Category IV: Proposed investigations which are recommended for rejection for this particular opportunity, for scientific, technical, or other reasons.

Following the evaluations described above, and in coordination with CNES, the NASA Program Office (Solar System Exploration Division, Office of Space Science) will develop a payload recommendation. This recommendation, and all peer review and categorization materials on all proposals submitted for NASA funding, will be submitted to the Space Science Steering Committee for review. Selections of NASA investigations for the Investigation Accommodation Phase will be made by the Associate Administrator for Space Science (NASA) based on the final recommendations of that committee.

## **2. Selection of Proposals Submitted to CNES AO**

CNES will conduct its categorization of proposals requesting CNES funding in accordance with its standard procedures, considering the results of the joint peer review, together with additional information regarding management and cost aspects. CNES will develop a payload recommendation for Champollion in coordination with NASA.

### **3. Provisional Investigation Selection and Accommodation**

NASA and CNES will coordinate their respective activities throughout the categorization and selection process. Provisionally selected investigations will be jointly announced by NASA and CNES in October 1995. Following provisional selection, NASA and CNES will conduct an Investigation Accommodation Phase prior to confirmation of investigations.

The Investigation Accommodation Phase (see Appendix A, Section IV) will last about one year. During this period, all provisionally selected investigations will be evaluated for cost, compatibility with the Champollion lander, and compatibility with other mission constraints.

Limited support will be provided to investigators during the Investigation Accommodation Phase, primarily for achieving an understanding of any instrument modifications required to match the configuration and constraints of the Champollion lander. In addition, proposers of certain provisionally selected investigations may be asked during this phase to coordinate the design of their instruments with other related instruments in ways which would reduce overall cost.

At the end of the Investigation Accommodation Phase, a Science Confirmation Review will be held to confirm all investigations and the final science payload. Confirmation of investigations will be subject to the following conditions:

1. Adherence to the financial constraints agreed upon. Descoping and/or deselection actions will be taken, as necessary, to stay within these constraints.
2. Demonstration, for all investigations, that the investigation is compatible with mission constraints, including those of mass, volume, available energy, configuration, data handling capability, and compatibility with other instruments.

NASA and CNES officials will participate in the Confirmation Review and will coordinate selection of the final payload for Champollion.

March 1, 1995  
AO No. 95-OSS-01

**APPENDIX E**  
**CERTIFICATION FORMS**

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**CERTIFICATION REGARDING  
DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS  
PRIMARY COVERED TRANSACTIONS**

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This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 28, 1988 Federal Register (pages 19160-19211). Copies of the regulations may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, D.C. 20202-4725, telephone (202) 732-2505.

**A. The applicant certifies that it and its principals:**

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three-year period preceding this application been convicted or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph A.(b) of this certification;
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or Local) terminated for cause or default; and

**B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.**

**C. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lowered Tier Covered Transactions (Subgrants or Subcontracts)**

- (a) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principles is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department of agency.
- (b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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Organization Name

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NRA or AO Number and Title

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Printed Name and Title of Authorized Representative

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Signature

---

Date

---

Printed Principal Investigator Name

---

Proposal Title



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### CERTIFICATION REGARDING LOBBYING

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As required by S 1352 Title 31 of the U.S. Code for persons entering into a grant or cooperative agreement over \$100,000, the applicant certifies that:

- (a) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, in connection with making of any Federal grant, the entering into of any cooperative, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement;
- (b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting an officer or employee of any agency, Member of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts), and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by S1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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Organization Name

NRA or AO Number and Title

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Printed Name and Title of Authorized Representative

---

Signature

Date

---

Printed Principal Investigator Name

Proposal Title

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## CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

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This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85. Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government-wide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

### I. GRANTEES OTHER THAN INDIVIDUALS

#### A. The grantee certifies that it will provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing a drug-free awareness program to inform employees about –
  - (1) The dangers of drug abuse in the workplace;
  - (2) The grantee's policy of maintaining a drug-free workplace;
  - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
  - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will
  - (1) Abide by the terms of the statement; and
  - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- (e) Notifying the agency within ten days after receiving notice under subparagraph (d) (2) from an employee or otherwise receiving actual notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d) (2), with respect to any employee who is so convicted –
  - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
  - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or Local health, Law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f)

#### B. The grantee shall insert in the space provided below the site(s) for the performance or work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

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Check \_\_\_\_\_ if there are workplaces on file that are not identified here.

### II. GRANTEES WHO ARE INDIVIDUALS

The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with the grant.

---

Organization Name

---

NRA or AO Number and Title

---

Printed Name and Title of Authorized Representative

---

Signature

---

Date

---

Printed Principal Investigator Name

---

Proposal Title

# CONTRACT PRICING PROPOSAL COVER SHEET

1. SOLICITATION/CONTRACT/MODIFICATION NO. FORM APPROVED OMB NO.  
9000-0013

Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (VRS), Office of Federal Acquisition Policy, GSA, Washington, D.C. 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0013), Washington, D.C. 20503.

NOTE: This form is used in contract actions if submission of cost or pricing data is required. (See FAR 15.804-8(b))

2. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)		3A. NAME AND TITLE OF OFFEROR'S POINT OF CONTACT		3B. TELEPHONE NO.	
4. TYPE OF CONTRACT ACTION (Check)					
<input type="checkbox"/> A. NEW CONTRACT		<input type="checkbox"/> D. LETTER CONTRACT			
<input type="checkbox"/> B. CHANGE ORDER		<input type="checkbox"/> E. UNPRICED ORDER			
<input type="checkbox"/> C. PRICE REVISION/REDETERMINATION		<input type="checkbox"/> F. OTHER (Specify)			
5. TYPE OF CONTRACT (Check)		6. PROPOSED COST (A+B=C)			
<input type="checkbox"/> FFP <input type="checkbox"/> CPFF <input type="checkbox"/> CPIF <input type="checkbox"/> CPAF <input type="checkbox"/> FPI <input type="checkbox"/> OTHER (Specify)		A. COST		B. PROFIT/FEE	
		\$		\$	
				C. TOTAL	
				\$	

7. PLACE(S) AND PERIOD(S) OF PERFORMANCE

8. List and reference the identification, quantity and total price proposed for each contract line item. A line item cost breakdown supporting this recap is required unless otherwise specified by the Contracting Officer. (Continue on reverse, and then on plain paper, if necessary, use same headings.)

A. LINE ITEM NO.	B. IDENTIFICATION	C. QUANTITY	D. TOTAL PRICE	E. REF.

9. PROVIDE NAME, ADDRESS, AND TELEPHONE NUMBER FOR THE FOLLOWING (if available)

A. CONTRACT ADMINISTRATION OFFICE		B. AUDIT OFFICE	
10. WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS WORK? (If "yes," identify)		11A. DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT? (If "Yes," complete item 11B)	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	
12. HAVE YOU BEEN AWARDED ANY CONTRACTS OR SUBCONTRACTS FOR THE SAME OR SIMILAR ITEMS WITHIN THE PAST 3 YEARS? (If "Yes," identify item(s), customer(s) and contract number(s))		11B. TYPE OF FINANCING (✓ one)	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> ADVANCE PAYMENTS <input type="checkbox"/> PROGRESS PAYMENTS <input type="checkbox"/> GUARANTEED LOANS	
13. IS THIS PROPOSAL CONSISTENT WITH YOUR ESTABLISHED ESTIMATING AND ACCOUNTING PRACTICES AND PROCEDURES AND FAR PART 31, COST PRINCIPLES? (If "No," explain)			
<input type="checkbox"/> YES <input type="checkbox"/> NO			

14. COST ACCOUNTING STANDARDS BOARD (CASB) DATA (Public Law 91-379 as amended and FAR PART 30)

A. WILL THIS CONTRACT ACTION BE SUBJECT TO CASB REGULATIONS? (If "No," explain in proposal)		B. HAVE YOU SUBMITTED A CASB DISCLOSURE STATEMENT (CASB DS-1 or 2)? (If "Yes," specify in proposal the office to which submitted and if determined to be adequate)	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	
C. HAVE YOU BEEN NOTIFIED THAT YOU ARE OR MAY BE IN NON-COMPLIANCE WITH YOUR DISCLOSURE STATEMENT OR COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)		D. IS ANY ASPECT OF THIS PROPOSAL INCONSISTENT WITH YOUR DISCLOSED PRACTICES OR APPLICABLE COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO	

This proposal is submitted in response to the RFP, contract, modification, etc. in item 1 and reflects our best estimates and/or actual costs as of this date and conforms with the instructions in FAR 15.804-8(b) (2), Table 15-2. By submitting this proposal, the offeror, if selected for negotiation, grants the contracting officer or an authorized representative the right to examine, at any time before award, those books, records, documents and other types of factual information, regardless of form or whether such supporting information is specifically referenced or included in the proposal as the basis for pricing, that will permit an adequate evaluation of the proposed price.

15. NAME AND TITLE (Type)	16. NAME OF FIRM

17. SIGNATURE	18. DATE OF SUBMISSION

# NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

**If your current address is NOT up-to-date, please fill out this form completely.**

*This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.*

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)  
☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please add my name to the mailing list.  
☐ 2. Please remove my name from the mailing list (please attach mailing label)  
☐ 3. Please update my current listing.

## CONTACT INFORMATION

If your address has changed or your mailing label is incorrect, please provide COMPLETE contact information.

Code Number: (obtain from mailing label)	Salutation: (Mr., Mrs., Ms., Dr., Prof., etc.)	Suffix: (Ret., PhD., Jr., III, etc.)
First Name:	Mt:	Last Name:
Organization:		
Division / Department:		
Street:		
City:	State:	Zip:
Telephone No:	Fax No:	
E-Mail Address:		Internet Address:
Country: (foreign addresses, please specify)		

## Institution Type

(check only those that apply)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> 1. College or University          | <input type="checkbox"/> 4. Minority Business     | <input type="checkbox"/> 7. Other Government Agency |
| <input type="checkbox"/> 2. Minority College or University | <input type="checkbox"/> 5. NASA HQs/Center       | <input type="checkbox"/> 8. Private Industry        |
| <input type="checkbox"/> 3. Foreign Addressee              | <input type="checkbox"/> 6. Nonprofit Corporation | <input type="checkbox"/> 9. Small Business          |

## Societies:

- ☐ A. American Astronomical Society      ☐ B. American Geophysical Union      ☐ C. Others \_\_\_\_\_

## Discipline:

(check only those that apply)

### 1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling  
☐ B. Instrumentation (Technology Dev)  
☐ C. Laboratory Astrophysics  
☐ D. Data Analysis (Archival)  
☐ E. Observational Programs

### 2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy  
☐ B. Planetary Materials and Geochemistry  
☐ C. Planetary Geology and Geophysics  
☐ D. Instrument Development  
☐ E. Origins of Solar Systems  
☐ F. Exobiology

### 3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics  
☐ B. Solar Physics  
☐ C. Magnetospheric Physics  
☐ D. Iono-Thermo-Mesospheric Physics

### 4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking  
☐ B. Scientific Data Analysis and Visualization  
☐ C. Science Data Storage and Management  
☐ D. Software Technology

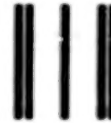
Process Tape (Do not staple)

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**08 / 08 / 95**